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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/549,341

11/17/2006

Leonid Kalika

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EXAMINER

BEAMER, TEMICA M

ART UNIT

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2617

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/549,341	<b>Applicant(s)</b> KALIKA ET AL.	
	<b>Examiner</b> Temica M. Beamer	<b>Art Unit</b> 2617	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-18 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 19-36 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 19-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 19 lacks the proper preamble necessary for a statutory computer program product claim. See MPEP 2100 for guidance on computer related inventions.

The examiner suggests the beginning of the preamble to read as follows:  
"A computer readable medium encoded with computer executable instructions to cause..."

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5, 6, 8, 9, 25-29, 31, 33, 35 and 36 rejected under 35 U.S.C. 102(b) as being anticipated by Rappaport et al (Rappaport), U.S. Patent No. 6,499,006.

Regarding claims 1, 25 and 26, Rappaport discloses a method placing nodes in a wireless local area network, the method comprising: receiving user-specified parameters regarding the wireless local area network, including: a layout of a space in which the wireless local area network is to be located (col. 4, lines 13-32, col. 6, lines 36-44), and a maximum number of wireless access points, or a number of users and a minimum wireless data throughput for at least some of the wireless access points (as evidenced by the fact the designer picks the equipment desired) ( col. 6, lines 36-60); performing a first phase of an algorithm by automatically creating a collection of candidate solutions to an optimized layout of multiple wireless access points within the space layout, wherein the candidate solutions at least in part take into account the user-specified parameters (col. 4, lines 23-28 and col. 6, lines 48-60); performing at least a second phase (refining) of the algorithm by automatically adjusting the candidate solutions in the collection to obtain the optimized layout of the multiple wireless access points within the space layout, wherein the optimized layout at least in part takes into account the user-specified parameters (col. 4, lines 23-28 and col. 6, lines 48-60); and displaying the optimized layout of the multiple wireless access points within the space layout (col. 6, lines 48-54 and col. 8, lines 23-34; figures 2-9).

Regarding claim 5, Rappaport discloses the method of claim 1 wherein at least one of the user-specified parameters has different weights during the first and second phases (col. 8, lines 23-33).

Regarding claim 6, Rappaport discloses the method of claim 1 wherein the user-specified parameters include at least one user-specified location of a fixed or preferred wireless local area network access point (col. 6, lines 48-60, col. 8, lines 23-28).

Regarding claim 8, Rappaport discloses the method of claim 1 wherein displaying the optimized layout of access points includes displaying color-coded wireless coverage patterns within the space layout, wherein the color-coding corresponds to bandwidth, signal strength or both (col. 7, lines 32-48).

Regarding claim 9, Rappaport discloses the method of claim 1 wherein receiving user-specified parameters includes receiving user adjustments to model assumptions, wherein the model assumptions include antenna specifications, wall type attenuation, or wireless local area network protocol bit rate/transmit power (col. 6, lines 34-60).

Regarding claim 27, Rappaport discloses the method of claim 25 wherein the additional information includes wireless coverage area, type of radio-frequency data link layer technology, bandwidth, or power (col. 6, lines 48-60).

Regarding claim 28, Rappaport discloses the method of claim 25 wherein the desired attribute for the wireless local area network includes whether the wireless local area network is to be coupled to an external, wired network wirelessly, or via wires (i.e., wireless) (col. 6, line 61-col. 7, line 40).

Regarding claim 29, Rappaport discloses the method of claim 25 wherein the space layout is a building layout, and wherein the parameters provided include types of construction for walls or floors within the building (col. 8, line 52-col. 9, line 14).

Regarding claim 31, Rappaport discloses the method of claim 25 wherein the desired attribute for the wireless local area network includes an amount of wireless coverage redundancy (col. 6, line 61-col. 7, line 28).

Regarding claim 33, Rappaport discloses the method of claim 25 wherein the desired attribute for the wireless local area network includes specific transmit/receive values (at dB per unit distance) or frequency (col. 6, lines 48-60).

Regarding claim 35, Rappaport discloses the method of claim 25 wherein the user input includes moving the at least one node, and the additional information includes an adjusted optimized layout based on the moved node (col. 8, lines 23-51).

Regarding claim 36, Rappaport discloses the method of claim 25 wherein the iterative optimization algorithm places the multiple nodes only with respect to a discrete set of grid points within the space layout (col. 5, lines 2-16, col. 7, lines 10-28).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3, 7, 30, 32 and 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Rappaport in view of well-known prior art.

Regarding claim, 2, Rappaport discloses the method of claim 1 as described above and further discloses wherein the space layout includes a number of floors, a

ceiling height, and walls, wherein the user-specified parameters include a type of wall construction; and wherein the user-specified parameters further include an antenna type and whether the wireless local area network is to be connected via wires or wirelessly to an external wired network (col. 6, lines 48-60, col. 6, line 61-col. 7, line 10, col. 7, lines 50-62 and col. 8, line 52-col. 9, line 14).

Rappaport, however, fails to disclose a user-specified requirement to employ to or more WLAN protocols local area network protocols, wherein the wireless local area network protocols include IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, or Bluetooth.

The examiner contends, however, that the number of systems chosen to implement would be a designer choice (since the designer can a desired system with desired equipment based on preference (col. 4, lines 36-60)).

The examiner further contends that network protocols IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, or Bluetooth are very well-known in the art and the examiner takes official notice as such.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Rappaport with well-known prior art since such protocols are widely used in the wireless environment such as the one disclosed in Rappaport.

Regarding claims 3 and 7, Rappaport discloses the methods of claims 1 and 25 as described above. Rappaport, however, fails to disclose wherein performing a first phase of the algorithm includes obtaining optimization parameters, wherein the optimization parameters include bandwidths of two or more wireless local area network protocols with associated receive sensitivities, and wherein the optimized layout

includes a minimum number of wireless access points, wherein the user-specified parameters include a location of a power outlet or an Ethernet connection.

The examiner contends, however, that such limitations are well-known in the art.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Rappaport with the limitations of well-known prior art as such implementation of the limitations would require only routine skill to achieve the desired system.

Regarding claim 30, Rappaport discloses the method of claim 25 as described above and further discloses wherein the space layout is a building layout, and wherein the optimized layout takes into account wireless propagation attenuation through walls (col. 6, lines 13-35).

Rappaport, however, fails to disclose the use of a COST231 Multi-Wall Model, an empirical one-slope model, a linear attenuation model or a ray-based Motif Model.

The examiner contends, however, that such models are very well-known in the art and the examiner takes official notice as such.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Rappaport with the teachings of well-known prior art since such models are widely used in the communications environment.

Regarding claim 32, Rappaport discloses the method of claim 25 as described above. Rappaport, however, fails to disclose wherein the desired attribute for the wireless local area network includes locations of existing infrastructure, and wherein the



optimized layout takes into account the locations of existing infrastructure to reduce wiring interconnections.

The examiner contends, however, that such a feature is well-known in the art and the examiner takes official notice as such.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Rappaport with the teachings of well-known prior in order to ensure proper functionality of the system when combined with the existing infrastructure.

Regarding claim 34, Rappaport discloses the method of claim 25 as described above. Rappaport, however, fails to disclose wherein the additional information includes estimated costs for components for the multiple nodes.

The examiner contends, however, that such a feature is well-known in the art and the examiner takes official notice as such.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Rappaport with the teachings of well-known prior in order for the designer to maintain a proper budget to build the system.

***Allowable Subject Matter***

7. Claims 10-18 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 10, prior art fails to suggest or render obvious a system for displaying node layout in a wireless local area network having means for displaying

Art Unit: 2617

backhaul nodes for connecting the wireless local area network to an external wired network; means for displaying multiple wireless access points, wherein the wireless access points are to be configured to exchange communications with the backhaul nodes; and means for displaying additional information with respect to at least some of the multiple wireless access points.

Regarding claims 11-18, they are indicated allowable solely on their dependence from allowable claim 10.

9. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to suggest or render obvious wherein the first phase includes performing a genetic algorithm and identifying a location of backhaul nodes for connecting the wireless local area network to an external wired network; wherein the second phase includes performing the genetic algorithm and identifying locations of IEEE 802.11-type access points that are to be connected wirelessly, or via wires, to the backhaul nodes; and wherein the method further comprises performing at least a third phase of the genetic algorithm to identify locations of Bluetooth-type access points that are to be connected wirelessly, or via wires, to the backhaul nodes.

**Conclusion**

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rappaport et al, U.S. Patent No. 6,971,063, discloses a system, method and apparatus for portable design, deployment, test and optimization of a communication network.

Kanazawa, U.S. Patent No. 6,691,293, discloses a layout instrument for semiconductor integrated circuits, layout method for semiconductor integrated circuits and recording medium that stores a program for determining layout of semiconductor integrated circuits.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Temica M. Beamer whose telephone number is (571) 272-7797. The examiner can normally be reached on Monday-Thursday (alternate Fridays) 7:30am-4:00pm.

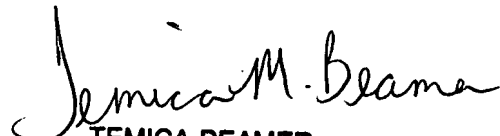
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charless Appiah can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

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Temica M. Beamer  
Primary Examiner  
Art Unit 2617

tmb

  
TEMICA BEAMER  
PRIMARY EXAMINER